

**REMARKS**

Claims 1-2 and 5-8 are pending in the present application. By this Amendment, claims 1, 6 and 8 have been amended. It is submitted that this Amendment is fully responsive to the Office Action dated March 10, 2011.

**Claim Rejections - 35 U.S.C. §103**

**Claims 1, 2, 6 and 8 are rejected under 35 U.S.C. §103 as being unpatentable over Jacob (USP 4,974,969) in view of Teramachi (USP 4,629,337).**

**Claims 1, 2 and 6-8 are rejected under 35 U.S.C. §103 as being unpatentable over Nagai (US 2002/0144561) in view of Jacob.**

These rejections are respectfully traversed. Claim 1, as amended, now recites “*wherein an outer periphery of the movable member has a substantially polygon shape in the section.*” Other independent claims 6 and 8 have been amended to include the same feature. This Amendment is supported by, for example, Fig. 4 of the present application. In other words, in the present claims, while the external shape of the track member has a substantially circular-arc shape in the section, the external shape of the movable member has a substantially polygon shape in the section.

On the contrary, in Jacob, as shown in Fig. 1, the inner guiding rail 2 has a circular shape in cross-section. Also, the outer basic member 7 has a circular shape in cross-section such that the external shape of the inner member 2 conforms with the external shape of the outer member 7. Therefore, Jacob teaches a principle that the external shape of the inner member conforms

with the external shape of the outer member. This principle is clearly different from the structure of the present claims wherein, while the external shape of the track member has a substantially circular-arc shape in the section, the external shape of the movable member has a substantially polygon shape in the section.

The second reference of Teramachi also teaches the same principle. Specifically, as shown in Fig. 1A, the inner spline shaft 2 has a circular shape in cross-section. Also, the outer sleeve 1 has a circular shape in cross-section such that the external shape of the inner spline shaft 2 conforms with the external shape of the outer sleeve 1.

While the external shape is not circular, the third reference of Nagai also teaches the same principle. Specifically, as shown in Fig. 3, the inner slider 18 has a substantially rectangular shape with upper opening in cross-section. Also, the outer guide-equipped frame 12 has a substantially rectangular shape with upper opening in cross-section such that the external shape of the inner slider 18 conforms with the external shape of the outer frame 12.

Because all of the above-discussed three cited references teach the same principle, even if *assuming arguendo* that those cited references could be combined with each other in accordance with the manner suggested by the Examiner, such combination also teaches the same principle that the external shape of the inner member conforms with the external shape of the outer member which is, as discussed above, clearly different from the structure of the amended claims.

**Teach away**

A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant.” *In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994); *see KSR*, 127 S. Ct. at 1739–40 (explaining that when the prior art teaches away from a combination, that combination is more likely to be nonobvious). Additionally, a reference may teach away from a use when that use would render the result inoperable. *In re Icon Health and Fitness, inc.*, No. 2006-1573 (Fed. Cir. 2007). Moreover, if proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). Furthermore, if the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959).

As to the shape of Nagai, if the skilled in the art considers space-saving design of the motion guide device, it is necessary that the external shape of a movement block is equal to the external shape of a track rail. In addition, processing is easy for the rectangular shape of the movable block and track rail. Therefore, because it is a matter to usually consider for those skilled in the art to design for space-saving and to adopt an easy processing method, it is not the matter that it is thought easily to form that the rail has a circular shape in cross-section and the movable block has a polygon shape in cross-section.

As described above, considering the space-saving design of the motion guide device, the external shapes of the movable block and the track rail should be equal. If the Examiner takes a position that Nagai's rectangular structure can be modified by Jacob's circular structure, such modification renders Nagai's invention unsatisfactory for its intended purpose (space-saving). Thus, Applicants submit that the prior art references teach away from such Examiner's suggested modification.

Furthermore, comparing the present claimed invention and references, because the present claimed invention has a polygon shape of movable block and circular shape of track rail, it is easy to process movable block and in spite of the compact outer dimension, the second moment of area can be made larger than the structure of rectangular shape of a movable block and a track rail like Nagai. Moreover, as to the present claimed invention has extensions, the external shape of track rail has a circular shape that is nearer to a closed curve. As to the width of the slit formed between the opposing extensions is narrow, the present claimed invention has an effect that a foreign substance is hard to be in the track rail and a noise sound becomes hard to leak from inner of the track rail.

In addition, Jacob and Teramachi are invention about the ball spline device and is a technique unlike the present claimed invention that is the invention about the actuator.

In view of the above, the amended independent claims 1, 6 and 8 patentably distinguish over the Examiner's cited references. Moreover, at least by virtue of the dependency, dependent claims 2, 5 and 7 also patentably distinguish over the Examiner's cited references.

In view of the aforementioned amendments and accompanying remarks, Applicants submit that the claims, as herein amended, are in condition for allowance. Applicants request such action at an early date.

If the Examiner believes that this application is not now in condition for allowance, the Examiner is requested to contact Applicants' undersigned attorney to arrange for an interview to expedite the disposition of this case.

If this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,

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